1859MNRAS..19...78L

stars not included in Mr. Pogson's list, the magnitudes of which I have determined photometrically with the 13-inch reflector of Mr. Worthington's observatory. As showing the degree of reliance to be placed on these magnitudes, I may remark that the greatest difference between my photometrical results and Mr. Pogson's for the stars included in his list does not exceed *two-tenths* of a magnitude.

From the above observations it appears that between the 12th and the 15th of November the brightness of U *Geminorum* increased through 4·7 magnitudes; or at the extraordinary rate of fully *one magnitude and a half* per day! The rate of decrease, though less striking, was still remarkable, averaging between the 16th and 21st of November not less than *three-fourths* of a magnitude per day.

The liability of the star to these rapid changes of brightness at its maximum may, probably, be the chief reason why it escaped observation at the expected times of its reappearance in January and May last; as a very short, and possibly also very low, maximum might occur during a few days of unfavourable weather, or when hazy skies were prevalent, and the moon at the same time inconveniently near the place of the star.

When the variable was at its maximum brightness on the 15th of November, I remarked that it was much less sharply defined than Mr. Pogson's comparison stars *b* and *c*, to which it was then equal in brightness; and that, compared with them, it had a somewhat hazy or nebulous appearance. This hazy appearance was also remarked on the 17th while viewing the star with Mr. Worthington's large reflector. During the whole time of the star's visibility, its colour, which was *white*, remained unchanged.

The next maximum of U *Geminorum* may be expected to occur between the 18th and 26th of February; and it is very desirable that it should then be more generally looked for than it appears to have been on past occasions, in order that it may not wholly escape observation in consequence of the prevalence of unfavourable weather in particular localities.

Manchester, Jan. 17, 1859.

Observations of Donati's Comet. By William Lassell, Esq.

(*Abstract.*)

I send some drawings of Donati's Comet with some observations in continuation of those which appeared in page 21 of the current volume of the *Monthly Notices.*

No other favourable opportunity of observation occurred

1859MNRAS..19...78L

until the 30th September. *Arcturus* and the comet were at about the same altitude, and the tail could be traced nearly far as the nearest bright star (η) of the *Great Bear.* The sky remained clear for only a short interval, and did not permit any view with either of the equatoreals.

On the 3d Oct. the comet was surveyed in the 20-foot equatoreal from about 6¾ to 7¼ hours. The following measures were taken along an imaginary line drawn through the nucleus at right angles to the direction or axis of the tail;

Diameter of nucleus .	6·74
,, ,, 1st envelope .	30·11
,, ,, 2d envelope .	102·2

On the following evening, the 4th, the change of aspect was marvellous. The black spot is an unexpected and surprising phenomenon. Unfortunately the sky shortly clouded, only affording time for the following measures to be rather hastily taken:

Diameter of nucleus .	6·68
,, ,, 1st envelope .	36·07
,, ,, 2d envelope .	81·37

The comet was generally not so well defined as yesterday.

On the 5th October at about $6^h\ 50^m$ P.M., the comet was surveyed briefly and uninterruptedly in the large equatoreal during intervals of storms of wind and rain.

On the 8th October there remained only a trace of the dark spot in the 2d envelope seen on the 4th and 5th insts., but the whole of this envelope had assumed a mottled appearance.

After the 8th I had no favourable view of the comet, and the last glimpse of it I saw was on the 17th Oct., about 6¼ P.M., when it presented a greatly faded aspect, at about 4 or 5° above the horizon.

P.S. Having been requested to scrutinize the immediate neighbourhood of α *Lyræ* for a minute star, or stars, which have been seen or suspected within the distance of the recognised companion, I send you the results of my examination on two favourable nights.

12th Sept. $10^h\ 40^m$ P.M. Viewed α *Lyræ* with the 20-foot equatoreal under very good circumstances, with various powers from 155 to 650, without being able to detect any star nearer than the well-known two, which with α form a nearly right-angled triangle with very unequal sides. The air steadier and the sky brighter than usual. The above two companions were very bright, and the search for others careful.

9th Dec. $5^h\ 40^m$ P.M. Looked again at α *Lyræ* for a small star accompanying it within the distance of the well-known

1859MNRAS..19...80P

small one. Various powers were used up to 650, but I could see no new star, although the space between α and the companion for at least nine-tenths of their distance exhibited as black a sky as any part of the field. I am, therefore, unable to furnish any corroborative evidence of the existence of the suspected star.

Bradstones, Sandfield Park, near Liverpool,
5th January, 1859.

Magnitudes of Forty-eight of the Minor Planets for the first Day of each Month of the Year 1859. By Norman Pogson, Esq.

(*Communicated by Dr. Lee.*)

The following table, intended to facilitate the identification of the Minor Planets, has been furnished by Mr. Pogson, of Dr. Lee's Observatory, Hartwell House. It is computed upon the light-ratio 2·512 (*Monthly Notices* of the Royal Astronomical Society, Vol. xviii. p. 48).

The log. distances have been taken from the *Supplement to the Nautical Almanac* for 1862.

No.	Planet.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Mean Opp. Mag.
①	Ceres	9·5	9·6	9·5	9·4	9·2	9·0	8·6	8·3	8·1	8·2	8·5	8·8	9·1	7·7
②	Pallas	10·2	10·2	10·2	10·0	9·8	9·6	9·3	9·1	9·1	9·3	9·6	9·8	10·0	7·9
③	Juno	10·7	10·4	10·2	9·9	9·9	10·0	10·3	10·7	11·0	11·1	11·2	11·2	11·2	8·7
④	Vesta	8·3	8·3	8·3	8·3	8·1	7·9	7·7	7·3	7·0	6·9	7·1	7·5	7·9	6·6
⑤	Astræa ..	9·7	9·3	9·0	9·1	9·6	10·1	10·6	11·0	11·3	11·6	11·8	11·9	11·9	10·0
⑥	Hebe	10·5	10·3	10·1	9·9	9·5	9·2	8·7	8·2	7·7	7·4	7·5	7·9	8·4	8·6
⑦	Iris	9·5	9·6	9·6	9·6	9·6	9·6	9·6	9·5	9·4	9·3	9·2	8·9	8·7	8·6
⑧	Flora	11·1	10·9	10·5	10·1	9·7	9·7	9·9	10·3	10·6	10·8	10·9	11·0	11·0	8·9
⑨	Metis	10·4	10·2	9·8	9·5	9·4	9·7	10·0	10·4	10·7	11·0	11·1	11·2	11·2	8·9
⑩	Hygeia ..	10·2	10·3	10·6	10·8	11·0	11·2	11·3	11·3	11·2	11·1	10·9	10·6	10·2	9·8
⑪	Parthenope	10·8	10·9	11·0	11·1	11·1	11·0	10·9	10·7	10·5	10·1	9·8	9·7	9·9	9·5
⑫	Victoria ..	10·7	10·8	11·2	11·6	11·9	12·1	12·2	12·2	12·2	12·1	11·9	11·6	11·2	9·6
⑬	Egeria ..	10·9	11·2	11·4	11·5	11·5	11·5	11·4	11·2	11·0	10·8	10·4	10·1	9·7	9·9
⑭	Irene	9·6	9·2	8·8	8·7	8·9	9·4	9·8	10·2	10·6	10·9	11·1	11·2	11·3	9·7
⑮	Eunomia ..	11·2	10·9	10·6	10·2	10·0	10·0	10·2	10·5	10·7	10·9	11·0	11·1	11·0	9·1
⑯	Psyche ..	11·7	11·6	11·4	11·0	10·7	10·3	9·9	9·7	9·9	10·1	10·4	10·7	10·9	10·1
⑰	Thetis ..	10·6	10·7	11·0	11·3	11·6	11·8	11·9	11·9	11·9	11·8	11·6	11·3	11·0	9·9
⑱	Melpomene	11·9	11·6	11·3	10·8	10·3	9·7	9·4	9·3	9·5	9·8	10·0	10·2	10·4	9·5
⑲	Fortuna ..	11·9	11·7	11·3	10·9	10·5	10·3	10·3	10·5	10·8	11·1	11·3	11·4	11·4	9·7
⑳	Massilia ..	11·7	11·6	11·5	11·2	10·9	10·5	10·1	9·9	10·0	10·3	10·6	10·9	11·1	9·3
㉑	Lutetia ..	12·0	11·7	11·3	10·9	10·4	9·8	9·4	9·4	9·7	10·1	10·5	10·9	11·2	10·3